



K A N S A S

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Ricin Q&A

What is ricin?

Ricin is a natural highly toxic protein derived from the beans of the castor plant (*R communis*), used to make castor oil. About one million metric tons of castor beans are processed per year. Ricin is a residue of this process.

Exposure to ricin can prove fatal within five days but does not always result in death. As with most toxins, children are more susceptible than adults if exposed. A very small amount can kill an adult and there is no known cure.

The use of ricin by terrorists is of concern. If introduced into food or water supplies, ricin would likely incapacitate large numbers of people and overwhelm hospitals and health resources. Ricin aerosol, if released into an enclosed structure such as a building, could prove especially dangerous.

How could people be exposed to ricin?

It is possible for people to be exposed to ricin through skin contact, injection, inhalation, or through contaminated food and water. In each case, exposure would likely occur only through a deliberate act.

Exposure to ricin by itself through skin contact is of little concern because the absorption amount is not great enough. To be absorbed through the skin, ricin must be enhanced with a powerful solvent. Symptoms resulting from skin exposure depend on the type of solvent used and how long the person was in contact with the ricin/solvent compound.

If injected, ricin causes immediate death of the muscles and lymph nodes near the site of the injection. Failure of the major organs and death usually follows.

If ingested, ricin causes nausea, vomiting and internal bleeding of the stomach and intestines, followed by failure of the liver, spleen and kidneys, and death by collapse of the circulatory system. If the seed of the castor bean plant is swallowed whole without damage to the seed coat, it will probably pass harmlessly through the system. But if the coat is chewed or broken, then swallowed, the poison will enter the body.

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If inhaled, ricin can cause death within 36 to 48 hours from failure of the respiratory and circulatory systems. To put the toxicity of ricin aerosol into perspective, it is about 4,000 times *less* toxic to humans as anthrax aerosol, but is nevertheless still highly toxic.

Notable incidents involving ricin

Ricin was used in the 1978 assassination of Bulgarian dissident Georgi Markov. While he waited at a London bus stop, someone jabbed Markov with the tip of an umbrella that injected him with a pellet containing ricin. He died four days later.

In 1991 in Minnesota, four members of an American extremist group were arrested for plotting to kill a U.S. marshal with ricin. The plan was discovered, and the men were convicted.

A man attempted to enter Canada from Alaska on his way to North Carolina in 1995. Canadian customs officials stopped the man and found him in possession of firearms, large amounts of cash, and a container of a white powder that was identified as ricin.

Law enforcement investigators discovered a crude laboratory in a man's basement in 1997 and found various toxic agents, including ricin.

In January 2003, British police arrested several men suspected of terrorist activity, and found castor beans and lab materials that could be used to make ricin in a London apartment where some of the men lived.